RAW SEQUENCE LISTING

**The Biotechnology Systems Branch of the Scientific and Technical
Information Center (STIC) no errors detected.**

Application Serial Number: 10|7|4,333 B

Source: ___11-00___

Date Processed by STIC: ___4-29-05___

ENTERED

RAW SEQUENCE LISTING   DATE: 04/29/2005
PATENT APPLICATION: US/10/714,333B   TIME: 15:47:15

Input Set : E:\13499us.txt
Output Set: N:\CRF4\04292005\J714333B.raw

```
 4 <110> APPLICANT: Dharmacon, Inc.
 5        Khvorova, Anastasia
 6        Reynolds, Angela
 7        Leake, Devin
 8        Marshall, William
 9        Scaringe, Stephen
11 <120> TITLE OF INVENTION: Functional and Hyperfunctional siRNA
13 <130> FILE REFERENCE: 13499US
15 <140> CURRENT APPLICATION NUMBER: 10/714,333B
16 <141> CURRENT FILING DATE: 2003-11-14
18 <150> PRIOR APPLICATION NUMBER: 60/502,050
19 <151> PRIOR FILING DATE: 2003-09-10
21 <150> PRIOR APPLICATION NUMBER: 60/426,137
22 <151> PRIOR FILING DATE: 2002-11-14
24 <160> NUMBER OF SEQ ID NOS: 1591911
26 <170> SOFTWARE: Proprietary
28 <210> SEQ ID NO: 1
29 <211> LENGTH: 19
30 <212> TYPE: RNA
31 <213> ORGANISM: Artificial Sequence
33 <220> FEATURE:
34 <223> OTHER INFORMATION: siRNA sense strand
36 <220> FEATURE:
37 <221> NAME/KEY: misc_feature
38 <222> LOCATION: (1)...(2)
39 <223> OTHER INFORMATION: n is any nucleotide
41 <220> FEATURE:
42 <221> NAME/KEY: misc_feature
43 <222> LOCATION: (4)...(4)
44 <223> OTHER INFORMATION: n is any nucleotide
46 <220> FEATURE:
47 <221> NAME/KEY: misc_feature
48 <222> LOCATION: (6)...(9)
49 <223> OTHER INFORMATION: n is any nucleotide
51 <220> FEATURE:
52 <221> NAME/KEY: misc_feature
53 <222> LOCATION: (12)...(12)
54 <223> OTHER INFORMATION: n is any nucleotide
56 <220> FEATURE:
57 <221> NAME/KEY: misc_feature
58 <222> LOCATION: (15)...(18)
59 <223> OTHER INFORMATION: n is any nucleotide
61 <400> SEQUENCE: 1
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                RAW SEQUENCE LISTING              DATE: 04/29/2005
                PATENT APPLICATION:  US/10/714,333B    TIME: 15:47:15

                Input Set : E:\13499us.txt
                Output Set: N:\CRF4\04292005\J714333B.raw

W--> 62 nnanannnnu cnaannnna                                          19
     64 <210> SEQ ID NO: 2
     65 <211> LENGTH: 19
     66 <212> TYPE: RNA
     67 <213> ORGANISM: Artificial Sequence
     69 <220> FEATURE:
     70 <223> OTHER INFORMATION: siRNA sense strand
     72 <220> FEATURE:
     74 <221> NAME/KEY: misc_feature
     75 <222> LOCATION: (1)...(2)
     76 <223> OTHER INFORMATION: n is any nucleotide
     78 <220> FEATURE:
     79 <221> NAME/KEY: misc_feature
     80 <222> LOCATION: (4)...(4)
     81 <223> OTHER INFORMATION: n is any nucleotide
     83 <220> FEATURE:
     84 <221> NAME/KEY: misc_feature
     85 <222> LOCATION: (6)...(9)
     86 <223> OTHER INFORMATION: n is any nucleotide
     88 <220> FEATURE:
     89 <221> NAME/KEY: misc_feature
     90 <222> LOCATION: (12)...(12)
     91 <223> OTHER INFORMATION: n is any nucleotide
     93 <220> FEATURE:
     94 <221> NAME/KEY: misc_feature
     95 <222> LOCATION: (15)...(18)
     96 <223> OTHER INFORMATION: n is any nucleotide
     98 <400> SEQUENCE: 2
W--> 99 nnanannnnu gnaannnna                                          19
    101 <210> SEQ ID NO: 3
    102 <211> LENGTH: 19
    103 <212> TYPE: RNA
    104 <213> ORGANISM: Artificial Sequence
    106 <220> FEATURE:
    107 <223> OTHER INFORMATION: siRNA sense strand
    109 <220> FEATURE:
    110 <221> NAME/KEY: misc_feature
    111 <222> LOCATION: (1)...(2)
    112 <223> OTHER INFORMATION: n is any nucleotide
    114 <220> FEATURE:
    115 <221> NAME/KEY: misc_feature
    116 <222> LOCATION: (4)...(4)
    117 <223> OTHER INFORMATION: n is any nucleotide
    119 <220> FEATURE:
    120 <221> NAME/KEY: misc_feature
    121 <222> LOCATION: (6)...(9)
    122 <223> OTHER INFORMATION: n is any nucleotide
    124 <220> FEATURE:
    125 <221> NAME/KEY: misc_feature
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PATENT APPLICATION: US/10/714,333B   TIME: 15:47:15

Input Set : E:\13499us.txt
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      126 <222> LOCATION: (12)...(12)
      127 <223> OTHER INFORMATION: n is any nucleotide
      129 <220> FEATURE:
      130 <221> NAME/KEY: misc_feature
      131 <222> LOCATION: (15)...(18)
      132 <223> OTHER INFORMATION: n is any nucleotide
      134 <400> SEQUENCE: 3
W-->  135 nnanannnnu unaannnna                                    19
      137 <210> SEQ ID NO: 4
      138 <211> LENGTH: 19
      139 <212> TYPE: RNA
      140 <213> ORGANISM: Artificial Sequence
      142 <220> FEATURE:
      143 <223> OTHER INFORMATION: siRNA sense strand
      145 <220> FEATURE:
      146 <221> NAME/KEY: misc_feature
      147 <222> LOCATION: (1)...(2)
      148 <223> OTHER INFORMATION: n is any nucleotide
      150 <220> FEATURE:
      151 <221> NAME/KEY: misc_feature
      152 <222> LOCATION: (4)...(4)
      153 <223> OTHER INFORMATION: n is any nucleotide
      155 <220> FEATURE:
      156 <221> NAME/KEY: misc_feature
      157 <222> LOCATION: (6)...(9)
      158 <223> OTHER INFORMATION: n is any nucleotide
      160 <220> FEATURE:
      161 <221> NAME/KEY: misc_feature
      162 <222> LOCATION: (12)...(12)
      163 <223> OTHER INFORMATION: n is any nucleotide
      165 <220> FEATURE:
      166 <221> NAME/KEY: misc_feature
      167 <222> LOCATION: (15)...(18)
      168 <223> OTHER INFORMATION: n is any nucleotide
      170 <400> SEQUENCE: 4
W-->  171 nnanannnnu cncannnna                                    19
      173 <210> SEQ ID NO: 5
      174 <211> LENGTH: 19
      175 <212> TYPE: RNA
      176 <213> ORGANISM: Artificial Sequence
      178 <220> FEATURE:
      179 <223> OTHER INFORMATION: siRNA sense strand
      181 <220> FEATURE:
      182 <221> NAME/KEY: misc_feature
      183 <222> LOCATION: (1)...(2)
      184 <223> OTHER INFORMATION: n is any nucleotide
      186 <220> FEATURE:
      187 <221> NAME/KEY: misc_feature
      188 <222> LOCATION: (4)...(4)
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RAW SEQUENCE LISTING   DATE: 04/29/2005
PATENT APPLICATION: US/10/714,333B   TIME: 15:47:15

Input Set : E:\13499us.txt
Output Set: N:\CRF4\04292005\J714333B.raw

```
      189 <223> OTHER INFORMATION: n is any nucleotide
      191 <220> FEATURE:
      192 <221> NAME/KEY: misc_feature
      193 <222> LOCATION: (6)...(9)
      194 <223> OTHER INFORMATION: n is any nucleotide
      196 <220> FEATURE:
      197 <221> NAME/KEY: misc_feature
      198 <222> LOCATION: (12)...(12)
      199 <223> OTHER INFORMATION: n is any nucleotide
      201 <220> FEATURE:
      202 <221> NAME/KEY: misc_feature
      203 <222> LOCATION: (15)...(18)
      204 <223> OTHER INFORMATION: n is any nucleotide
      206 <400> SEQUENCE: 5
W--> 207 nnanannnnu gncannnna                                         19
      209 <210> SEQ ID NO: 6
      210 <211> LENGTH: 19
      211 <212> TYPE: RNA
      212 <213> ORGANISM: Artificial Sequence
      214 <220> FEATURE:
      215 <223> OTHER INFORMATION: siRNA sense strand
      217 <220> FEATURE:
      218 <221> NAME/KEY: misc_feature
      219 <222> LOCATION: (1)...(2)
      220 <223> OTHER INFORMATION: n is any nucleotide
      222 <220> FEATURE:
      223 <221> NAME/KEY: misc_feature
      224 <222> LOCATION: (4)...(4)
      225 <223> OTHER INFORMATION: n is any nucleotide
      227 <220> FEATURE:
      228 <221> NAME/KEY: misc_feature
      229 <222> LOCATION: (6)...(9)
      230 <223> OTHER INFORMATION: n is any nucleotide
      232 <220> FEATURE:
      233 <221> NAME/KEY: misc_feature
      234 <222> LOCATION: (12)...(12)
      235 <223> OTHER INFORMATION: n is any nucleotide
      237 <220> FEATURE:
      238 <221> NAME/KEY: misc_feature
      239 <222> LOCATION: (15)...(18)
      240 <223> OTHER INFORMATION: n is any nucleotide
      242 <400> SEQUENCE: 6
W--> 243 nnanannnnu uncannnna                                         19
      245 <210> SEQ ID NO: 7
      246 <211> LENGTH: 19
      247 <212> TYPE: RNA
      248 <213> ORGANISM: Artificial Sequence
      250 <220> FEATURE:
      251 <223> OTHER INFORMATION: siRNA sense strand
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RAW SEQUENCE LISTING   DATE: 04/29/2005
PATENT APPLICATION: US/10/714,333B   TIME: 15:47:15

Input Set : E:\13499us.txt
Output Set: N:\CRF4\04292005\J714333B.raw

```
253 <220> FEATURE:
254 <221> NAME/KEY: misc_feature
255 <222> LOCATION: (1)...(2)
256 <223> OTHER INFORMATION: n is any nucleotide
258 <220> FEATURE:
259 <221> NAME/KEY: misc_feature
260 <222> LOCATION: (4)...(4)
261 <223> OTHER INFORMATION: n is any nucleotide
263 <220> FEATURE:
264 <221> NAME/KEY: misc_feature
265 <222> LOCATION: (6)...(9)
266 <223> OTHER INFORMATION: n is any nucleotide
268 <220> FEATURE:
269 <221> NAME/KEY: misc_feature
270 <222> LOCATION: (12)...(12)
271 <223> OTHER INFORMATION: n is any nucleotide
273 <220> FEATURE:
274 <221> NAME/KEY: misc_feature
275 <222> LOCATION: (15)...(18)
276 <223> OTHER INFORMATION: n is any nucleotide
278 <400> SEQUENCE: 7
```
W--> 279 nnanannnnu cnuannnna   19
```
281 <210> SEQ ID NO: 8
282 <211> LENGTH: 19
283 <212> TYPE: RNA
284 <213> ORGANISM: Artificial Sequence
286 <220> FEATURE:
287 <223> OTHER INFORMATION: siRNA sense strand
289 <220> FEATURE:
290 <221> NAME/KEY: misc_feature
291 <222> LOCATION: (1)...(2)
292 <223> OTHER INFORMATION: n is any nucleotide
294 <220> FEATURE:
295 <221> NAME/KEY: misc_feature
296 <222> LOCATION: (4)...(4)
297 <223> OTHER INFORMATION: n is any nucleotide
299 <220> FEATURE:
300 <221> NAME/KEY: misc_feature
301 <222> LOCATION: (6)...(9)
302 <223> OTHER INFORMATION: n is any nucleotide
304 <220> FEATURE:
305 <221> NAME/KEY: misc_feature
306 <222> LOCATION: (12)...(12)
307 <223> OTHER INFORMATION: n is any nucleotide
309 <220> FEATURE:
310 <221> NAME/KEY: misc_feature
311 <222> LOCATION: (15)...(18)
312 <223> OTHER INFORMATION: n is any nucleotide
314 <400> SEQUENCE: 8
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RAW SEQUENCE LISTING ERROR SUMMARY DATE: 04/29/2005
PATENT APPLICATION: US/10/714,333B TIME: 15:47:16

Input Set : E:\13499us.txt
Output Set: N:\CRF4\04292005\J714333B.raw

Please Note:
Use of n and/or Xaa have been detected in the Sequence Listing. Please review the
Sequence Listing to ensure that a corresponding explanation is presented in the <220>
to <223> fields of each sequence which presents at least one n or Xaa.

Seq#:1; N Pos. 1,2,4,6,7,8,9,12,15,16,17,18
Seq#:2; N Pos. 1,2,4,6,7,8,9,12,15,16,17,18
Seq#:3; N Pos. 1,2,4,6,7,8,9,12,15,16,17,18
Seq#:4; N Pos. 1,2,4,6,7,8,9,12,15,16,17,18
Seq#:5; N Pos. 1,2,4,6,7,8,9,12,15,16,17,18
Seq#:6; N Pos. 1,2,4,6,7,8,9,12,15,16,17,18
Seq#:7; N Pos. 1,2,4,6,7,8,9,12,15,16,17,18
Seq#:8; N Pos. 1,2,4,6,7,8,9,12,15,16,17,18
Seq#:9; N Pos. 1,2,4,6,7,8,9,12,15,16,17,18
Seq#:10; N Pos. 1,2,4,6,7,8,9,12,15,16,17,18
Seq#:11; N Pos. 1,2,4,6,7,8,9,12,15,16,17,18
Seq#:12; N Pos. 1,2,4,6,7,8,9,12,15,16,17,18
Seq#:13; N Pos. 1,2,4,6,7,8,9,12,15,16,17,18
Seq#:14; N Pos. 1,2,4,6,7,8,9,12,15,16,17,18
Seq#:15; N Pos. 1,2,4,6,7,8,9,12,15,16,17,18
Seq#:16; N Pos. 1,3,5,6,7,8,11,14,15,16,17
Seq#:17; N Pos. 1,2,4,6,7,8,9,12,15,16,17,18
Seq#:18; N Pos. 1,2,4,6,7,8,9,12,15,16,17,18
Seq#:19; N Pos. 1,2,4,6,7,8,9,12,15,16,17,18
Seq#:20; N Pos. 1,2,4,6,7,8,9,12,15,16,17,18
Seq#:21; N Pos. 1,2,4,6,7,8,9,12,15,16,17,18
Seq#:22; N Pos. 1,2,4,6,7,8,9,12,15,16,17,18
Seq#:23; N Pos. 1,2,4,6,7,8,9,12,15,16,17,18
Seq#:24; N Pos. 1,2,4,6,7,8,9,12,15,16,17,18
Seq#:25; N Pos. 1,2,4,6,7,8,9,12,15,16,17,18
Seq#:26; N Pos. 1,2,4,6,7,8,9,12,15,16,17,18
Seq#:27; N Pos. 1,2,4,6,7,8,9,10,12,15,16,17,18
Seq#:28; N Pos. 4,5,7,9,10,11,12,15,18,19,20,21

VERIFICATION SUMMARY   DATE: 04/29/2005
PATENT APPLICATION: **US/10/714,333B**   TIME: 15:47:16

Input Set : **E:\13499us.txt**
Output Set: **N:\CRF4\04292005\J714333B.raw**

```
L:62 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1 after pos.:0
L:99 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:2 after pos.:0
L:135 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:3 after pos.:0
L:171 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:4 after pos.:0
L:207 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:5 after pos.:0
L:243 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:6 after pos.:0
L:279 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:7 after pos.:0
L:315 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:8 after pos.:0
L:351 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:9 after pos.:0
L:387 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:10 after pos.:0
L:423 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:11 after pos.:0
L:459 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:12 after pos.:0
L:495 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:13 after pos.:0
L:531 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:14 after pos.:0
L:567 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:15 after pos.:0
L:603 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:16 after pos.:0
L:639 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:17 after pos.:0
L:675 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:18 after pos.:0
L:711 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:19 after pos.:0
L:747 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:20 after pos.:0
L:783 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:21 after pos.:0
L:819 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:22 after pos.:0
L:855 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:23 after pos.:0
L:891 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:24 after pos.:0
L:927 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:25 after pos.:0
L:963 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:26 after pos.:0
L:999 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:27 after pos.:0
L:1035 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:28 after pos.:0
```